

CLAIMS

New claims:

9. A piezoelectric element, comprising a multilayer structure of piezoelectric plies; internal electrodes arranged between said piezoelectric plies; a lateral contacting of said internal electrodes in alternate directions via external electrodes, said piezoelectric plies individually being composed of a continuous film that is foldable during manufacture and provided at least partially with said electrodes which are electrically conductive, said film being at least partially metalized to produce said electrodes, said piezoelectric plies being formed by folding at notches applied at intervals transversely to a direction of folding, said internal electrodes being formed by metalized layers lying on an inside of the notches after the folding, and said metalized layers being interrupted on an outside of the notches, said internal electrodes being contacted with said external electrodes on insides of said notches projecting outwards after the folding.

10. A piezoelectric element as defined in claim 9, wherein only every other surface between the notches is metalized at least on one side of side film.

11. A piezoelectric element as defined in claim 9, wherein said external electrodes are composed of an electrically conductive material selected from the group consisting of a screen and a net.

12. A piezoelectric element as defined in claim 9, wherein said external electrodes are wave electrodes.

13. A piezoelectric element as defined in claim 9, wherein said multilayer structure of said piezoelectric plies is provided with an electrically insulating ceramic plate at each end of said folded plies.

14. A piezoelectric element as defined in claim 9, wherein the piezoelectric element is formed as a component of a piezoelectric actuator which is usable to actuate a mechanical component.

15. A piezoelectric element as defined in claim 9, wherein the piezoelectric element is formed as a component of a piezoelectric actuator which is usable to actuate a mechanical component which is a valve.

16. A method of producing a piezoelectric element having a multilayer structure of piezoelectric plies, comprising the steps of cutting a

piezoelectric film to a width of the piezoelectric element and providing the cut piezoelectric film with notches at intervals always in alternate directions; metalizing the piezoelectric film at least partially on both sides; folding the piezoelectric film at the notches around an inside of the notch; applying external electrodes by soldering to an internal electrode in a bending region, in the inside of the notch projecting outward after the folding.

17. A method as defined in claim 16; and further comprising installing on external piezoelectric plies before sintering an electrically insulating head and foot plate composed of piezoelectric ceramic.

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